

University students helped INL find companies interested in patent-pending technology. MorphoHawk is a patent-pending computational method that solves many types of image and signal analysis challenges. Here, it illustrates defects in an experimental sample of nuclear fuel.

MorphoHawk is no cakewalk

By Stephanie Cook, *INL Technology Deployment*

"School is cake for me," said Christopher Castillo, "but this MorphoHawk project really made me stretch."

Castillo and a team of four other Brigham Young University-Idaho students working on their senior capstone project were challenged with researching and finding companies that may be interested in licensing INL's MorphoHawk technology.

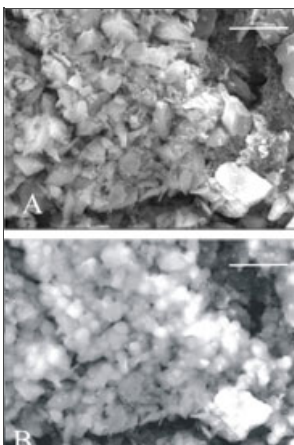
MorphoHawk, developed by Idaho National Laboratory's Dr. Michael V. Glazoff and colleagues, is a patent-pending computational method that solves many types of image and signal analysis challenges. Specifically, it extracts useful information from images obtained under changing conditions, such as varied weather or lighting. The technology monitors known objects or terrain to automatically identify the appearance of new objects of interest. [See a demonstration in the video here.](#)

"We had to think from different sides and how other companies may want to use this technology," Castillo said. "This was like a real job, because we didn't know the answers to many of the questions."

Each year, INL's Technology Deployment team partners with regional colleges and universities to launch, develop and sponsor a wide variety of student research activities. The goal is to share the mission of the lab, help transfer INL technology to the marketplace, and build the next generation of science, technology and technology business experts.



BYU-Idaho student Christopher Castillo said his team contacted 12 companies and eight universities that may be interested in INL's patent-pending MorphoHawk technology.



MorphoHawk enables prediction of battery electrode aging by comparing "fresh" electrode material microstructure, top, with the results after modeling one charge/discharge cycle.

"It is very important for university students to gain an understanding of how technology is transferred from national laboratories," said Jason Stolworthy, INL's deputy director for Technology Deployment. "Students need to consider the significant impact of companies that were started from technology transfer efforts, including Google, Sun Microsystems, Silicon Graphics, Netscape, Cisco Systems and Yahoo."

"It really is a win-win for INL to work with university students, give them a solid project with real-world impact and maybe even find an interested commercialization partner for the MorphoHawk technology," Stolworthy added.

Stolworthy advised the team of five students from BYU-Idaho, in conjunction with the Eastern Idaho Entrepreneurial Center. Together, they researched four interest areas for MorphoHawk, including image recognition, instrument analysis, wireless communications and projectional research.

The students used both [primary and secondary market research](#) and developed a three-step approach to write their final report. The steps included locating universities and companies who conducted research in these areas and visiting their websites to gather information. Finally, the students interviewed contacts at the organizations to explain MorphoHawk and its application.

"These energetic students produced eight very promising leads from the 119 phone calls they made," said Stolworthy. In addition, 12 other companies requested additional information about the technology."

The BYU-Idaho student team presented its results in a final report delivered during a visit to the Center for Advanced Energy Studies at INL earlier this year.

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